Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2018-06-07-09** **Date: 11/06/2018**

Customer : Assistant Executive Engineer, Shettyhalli Sub division, BBMP, Bangalore.

Address : Shettyhalli Sub division, BBMP, Bangalore.

Project Name : Improvements to road and drain at Jarakabande Kaval Slum in ward no. 12 Shettyhalli Sub Division.

Agency : Sri N.Shivananda, No.35, 2nd Cross, 1st A Main road, Defiance colony, Bagalagunte, Bangalore

Customer's Reference : EE/DD/WO/112/17-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 07-06-18

Sample ID No : 2018-06-07-09 /01

Customer ID : RCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 11/06/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	RCC	M20	04/06/2018	11/06/2018	149.88 X 150.63 X 150.44	22576	8.242	408.6	18.1	18.2
2	RCC	M20	04/06/2018	11/06/2018	150.78 X 150.64 X 150.58	22713	8.197	406.6	17.9	
3	RCC	M20	04/06/2018	11/06/2018	150.77 X 150.78 X 150.66	22733	8.213	422.8	18.6	

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Authorized Signatory
Quality Manager

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2018-06-07-09** **Date: 02/07/2018**

Customer : Assistant Executive Engineer, Shettyhalli Sub division, BBMP, Bangalore.

Address : Shettyhalli Sub division, BBMP, Bangalore.

Project Name : Improvements to road and drain at Jarakabande Kaval Slum in ward no. 12 Shettyhalli Sub Division.

Agency : Sri N.Shivananda, No.35, 2nd Cross, 1st A Main road, Defiance colony, Bagalagunte, Bangalore

Customer's Reference : EE/DD/WO/112/17-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 07-06-18

Sample ID No : 2018-06-07-09 /02

Customer ID : RCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 02/07/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	RCC	M20	04/06/2018	02/07/2018	150.42 X 150.54 X 150.45	22644	8.312	523.1	23.1	23.1
2	RCC	M20	04/06/2018	02/07/2018	150.42 X 150.54 X 150.45	22644	8.331	516.3	22.8	
3	RCC	M20	04/06/2018	02/07/2018	150.32 X 150.54 X 150.35	22629	8.345	531.8	23.5	

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Quality Manager

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M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

Format No: CP/TF/01

TEST REPORT OF FINE AGGREGATE

Lab ID	:	**CP-2018-06-01-07** **Date: 04-06-18**
Customer	:	Assistant Executive Engineer, Shettyhalli Sub division, BBMP, Bangalore.
Address	:	Shettyhalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to road and drain at Jarakabande Kaval Slum in ward no. 12 Shettyhalli Sub Division.
Agency	:	Sri N.Shivananda, No.35, 2nd Cross, 1st A Main road, Defiance colony, Bagalagunte, Bangalore
Customer's Reference	:	EE/DD/WO/112/17-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	01-06-18
Sample ID No	:	2018-06-01-07 /03
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	01-06-18
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	86	86	8.6	91.4	90-100	90-100	90-100	95-100
3	2.36 mm	144	230	23.0	77.0	60-95	75-100	85-100	95-100
4	1.18 mm	175	405	40.5	59.5	30-70	55-90	75-100	90-100
5	600 micron	179	584	58.4	41.6	15-34	35-59	60-79	80-100
6	300 micron	185	769	76.9	23.1	5-20	8-30	12-40	15-50
7	150 micron	132	901	90.1	9.9	0-10	0-10	0-10	0-15
8	Pan	99	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2018-06-01-07** **Date: 04-06-18**

Sample ID No : 2018-06-01-07 /03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.75	–
2	Specific Gravity	2.56	–
3	Material finer than 75 micron(%)	4.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2018-06-01-07** **Date: 04-06-18**
Customer	:	Assistant Executive Engineer, Shettyhalli Sub division, BBMP, Bangalore.
Address	:	Shettyhalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to road and drain at Jarakabande Kaval Slum in ward no. 12 Shettyhalli Sub Division.
Agency	:	Sri N.Shivananda, No.35, 2nd Cross, 1st A Main road, Defiance colony, Bagalagunte, Bangalore
Customer Reference	:	EE/DD/WO/112/17-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	01-06-18
Sample ID No	:	2018-06-01-07 /02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	01-06-18

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : **5000** **grams**

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	243	243	4.9	95.1	90-100
3	10 mm	2544	2787	55.7	44.3	25-55
4	4.75 mm	1768	4555	91.1	8.9	0-10
5	Pan	445	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2018-06-01-07** **Date: 04-06-18**

Sample ID No : 2018-06-01-07 /02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	**13.2**	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	**12.4**	
3	Specific Gravity	**2.65**	_
4	Bulk Density(Loose) (Kg/l)	**1.47**	_
5	Bulk Density(Compacted) (Kg/l)	**1.49**	_
6	Water Absorption(%)	**0.2**	_
7	Aggregate crushing Value(%)	**22.4**	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	**21.8**	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2018-06-01-07** **Date: 04-06-18**
Customer	:	Assistant Executive Engineer, Shettyhalli Sub division, BBMP, Bangalore.
Address	:	Shettyhalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to road and drain at Jarakabande Kaval Slum in ward no. 12 Shettyhalli Sub Division.
Agency	:	Sri N.Shivananda, No.35, 2nd Cross, 1st A Main road, Defiance colony, Bagalagunte, Bangalore
Customer's Reference	:	EE/DD/WO/112/17-18
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	01-06-18
Sample ID No	:	2018-06-01-07 /02(a)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	01-06-18

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	322	322	2.1	97.9	90-100
3	20 mm	5643	5965	39.8	60.2	30-70
4	10 mm	4663	10628	70.9	29.1	10-35
5	4.75 mm	4025	14653	97.7	2.3	0-5
6	Pan	347	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2018-06-01-07** **Date: 04-06-18**

Sample ID No : 2018-06-01-07 /02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	13.2	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.6	
3	Specific Gravity	2.68	_
4	Bulk Density(Loose) (Kg/l)	1.55	_
5	Bulk Density(Compacted) (Kg/l)	1.59	_
6	Water Absorption(%)	0.21	_

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2018-06-01-07** **Date: 04-06-18**
Customer	:	Assistant Executive Engineer, Shettyhalli Sub division, BBMP, Bangalore.
Address	:	Shettyhalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to road and drain at Jarakabande Kaval Slum in ward no. 12 Shettyhalli Sub Division.
Agency	:	Sri N.Shivananda, No.35, 2nd Cross, 1st A Main road, Defiance colony, Bagalagunte, Bangalore
Customer's Reference	:	EE/DD/WO/112/17-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	01-06-18
Sample ID No	:	2018-06-01-07 /01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	02-06-18
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.6	_
2	Finess by Air permeablity method (m^2/kg,Min)	275.5	225m^2/kg, Min
3	Density (gm/cc)	3.11	_
4	Standard Consistency (%)	0.27	Not specified
5	Initial Setting time (minutes)	165 minutes	Not less than 30 minutes
6	Final Setting time (minutes)	255 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method) (mm)	2.0mm	Not more than 10 mm

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2018-06-01-07** **Date: 30-06-18**
Customer	:	Assistant Executive Engineer, Shettyhalli Sub division, BBMP, Bangalore.
Address	:	Shettyhalli Sub division, BBMP, Bangalore.
Project Name	:	Improvements to road and drain at Jarakabande Kaval Slum in ward no. 12 Shettyhalli Sub Division.
Agency	:	Sri N.Shivananda, No.35, 2nd Cross, 1st A Main road, Defiance colony, Bagalagunte, Bangalore
Customer's Reference	:	EE/DD/WO/112/17-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	01-06-18
Sample ID No	:	2018-06-01-07 /01
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	02-06-18
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results (N/mm^2)	Requirement as per IS 12269: 2013
1	3 Days	29.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	37.5N/mm^2	Not less than 37 N/mm^2
3	28 Days	54.5N/mm^2	Not less than 53 N/mm^2

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